Annual Index

to

ELECTRICAL ENGINEERING

for

Volume 78, 1959

This section contains complete multientry indexes covering the contents of *Electrical Engineering* for the calendar year 1959. It includes all special articles and authors, all news items, and all items published in *Electrical Engineering* on AIEE technical program papers, whether they appear in the form of a digest, essentially full text, or full text. The technical program papers are indexed also by both title and author.

With further reference to technical program papers, if a *Digest* appears, it will be listed as (Digest of 59-000). If the essentially full text or the full text appears, it will be listed simply as (59-000).

The contents are arranged according to **Subject** and **Author Index** listing articles and authors; **News Index** listing all items that appeared in Institute Activities, Of Current Interest, and Electrical Engineering Education sections, with a **Biographical Index** of personal and obituary items on AIEE members.

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analyst working in the field. With primary emphasis on the types of problems that can be solved, such topics are discussed as problem planning and programming, simulation of linear systems, the use of diodes in analog computations, function relays, implicit-function techniques, and arbitrary function generators.

PROGRESS IN NUCLEAR ENERGY. (METALLURGY AND FUELS, VOLUME 2.) Edited by H. M. Finniston and J. P. Howe. Pergamon Press, 122 E. 55th St., New York 22, N. Y., 1959. 653 pages, 6¼ by 9¼ inches, bound. $21. The volume is divided into two parts. Part one is an account of the metallurgical development of the various materials of specific interest to nuclear energy. In this section an attempt is made to report the experiences of various countries in respect to their development of particular fuel elements for a number of diverse reactor systems. Part two is concerned with solid-state physics and physical metallurgy.

RECENT ADVANCES IN ATMOSPHERIC ELECTRICITY. Edited by L. G. Smith. Pergamon Press, 122 E. 55th St., New York 22, N. Y., 1959. 631 pages, 7½ by 9¼ inches, bound. $17.50. Papers included in this volume constitute the proceedings of the Second Conference on Atmospheric Electricity, and deal with fair weather electricity, thunderstorm electricity, and the lightning discharge. Among the many aspects covered are recent progress in the electricity of the terrestrial atmosphere, in cloud physics, and weather modification.

TWO-WAY RADIO. By A. H. Lytel. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, N. Y., 1959. 291 pages, 6¼ by 9½ inches, bound. $9.50. This book is an introduction to the theory and practice of voice-modulated radio communications covering both mobile and base-station radio transmitters and receivers as well as their related test equipment. Both AM and FM transmitters and receivers are covered as are antennas, selective calling methods, power supplies, installation, and servicing. Newer types of AM such as single side band, suppressed carrier double side band, and synchronous AM are also described.

VACUUM VALVES IN PULSE TECHNIQUES. By P. A. Neeteson. Second edition. The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1959. 195 pages, 6¼ by 9 inches, bound. $5.50. This presents methods used for determining the behavior of a network in which electron tubes are used as switches. After an introductory section on the opening and closing of switches in networks and on the principles of operational calculus, a thorough treatment of the vacuum tube as a switch is given. Then follows a discussion of multivibrators, specifically bistable, monostable, and astable vibrators. In this edition a new chapter on several types of blocking oscillators is included.

TECHNICAL LITERATURE

The following recently issued technical literature may be of interest to readers of *Electrical Engineering*. All inquiries should be addressed to the issuers.

STATISTICAL SURVEY—GENERATING CO-OPERATIVES AND MUNICIPALITIES (TID-8509). Published by the Atomic Energy Commission, this survey is available from the Office of Technical Services (OTS), Department of Commerce, Washington 25, D.C., for $1.25. This is an assessment of the feasibility of low-level power generation through the use of certain types of small-sized nuclear reactors. It includes data obtained through a questionnaire sent to more than 217 co-operative and publicly owned electric power organizations having generating capacities of 500 kw. or over. Other publications relating to the low-level power generation study, which are available from the OTS, are: TID-8508, *Task Force Evaluation Report—Small-Sized Nuclear Power Plant Program*, price $1.75; TID-8510-A, *A Brief Summary of Boiling Water Reactors in the 5- to 40-EMW Range*, price $2.75; TID-8511, *Small-Sized Organic Moderated Reactors*, price $1.25; TID-8512, *20,000-KW Organic Moderated Power Plant*, price $2.75; TID-8514, *Survey of PWR Power Plants, 10- to 30-EMW Size*, price $4.

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EIA STANDARDS. Copies of the following Electronic Industries Association (EIA) standards may be obtained through the EIA Engineering Dept., 11 W. 42nd St., New York 36, N.Y. *Land Mobile Communication FM and PM Transmitters*, RS-152-A, price 80¢ a copy; *Television Picture Area—35-mm and 16-mm Motion-Picture Film*, RS-226, price 25¢ a copy; *One-Inch Perforated Paper Tape*, RS-227, price 25¢ a copy; *Fixed, Tantalum Electrolytic Capacitors (Polarized)*, RS-228, price $1.65 a copy.

ASA STANDARD. A new standard, called *Standard Method of Measurement of Television Luminance Signal Levels*, C6.3-1959, has been approved as an American Standard and published by the American Standards Association (ASA). It describes methods of measuring the significant amplitude levels of a monochrome or color television signal, either composite or noncomposite. It consists primarily of a change in the response characteristics of the oscilloscopes to insure adequate suppression of the color subcarrier. It is also identified as an Institute of Radio Engineers (IRE) standard, 58 IRE 23, S1, replacing Part 1 of standard 50 IRE 23, S1. It is available at 60¢ a copy from the ASA, Dept. PR 108, 70 E. 45th St., New York 17, N.Y.

THE SERVO ENGINEER'S HANDBOOK. This 128-page illustrated text book is the first book devoted to servo components specifically and meets the need for a guide to the application of servomechanisms. The handbook deals with the individual components—how to use them, not how to make them. Although the basic theory is presented, the over-all treatment is practical rather than classical. There are 61 diagrams, schematics, graphs, and 65 major equations. The book contains eight chapters: Introduction to Servomechanisms; Servo Motors; Rate Generators; Synchros; Gear Trains; Servo Amplifiers; Servo-System Engineering; Environmental Testing. It is available from Daystrom Transicoil, Division of Daystrom, Inc., Montgomery County, Pa. The price is $5.

NATIONAL ELECTRICAL CODE. 1959 Edition. The following new and revised National Electrical Manufacturers Association (NEMA) Standard publications are available: AB 1-1959 *Molded Case Circuit Breakers* (40¢ per copy); BC 1-1959 *Bituminized-Fibre Conduits and Fittings* (40¢ per copy); CP1-1959 *Shunt Capacitors* (50¢ per copy); DC 4-1959 *Dial Arrangement of Warm Air Limit and Fan Controls* (20¢ per copy); DC 5-1959 *Surface-Type Electric Water Heater Controls* (20¢ per copy) DC 6-1959 *Nameplate Information, Ampere Ratings, Voltage Rating and Load Characteristics* (20¢ per copy); FU 1-1959 *Low-Voltage Cartridge Fuses* (70¢ per copy); HE 2-1959 *Electric House Heating Equipment* (30¢ per copy); HV 1-1959 *Summary of Characteristics of Apparatus Insulators* (25¢ per copy); SM 10-1959 *Piping Systems for Turbine Generator Units* ($2 per copy). Howard Michener of the NEMA staff has prepared an *Analysis* of the changes which have been approved since 1956. Price is 50¢ each. Copies of the Analysis as well as Standards are available from National Electrical Manufacturers Association, 155 E. 44th St., New York 17, N.Y.

IEC STANDARDS. Three new chapters to the International Electrotechnical Commission (IEC) Specification for Alternating-Current Circuit Breakers (56-4) have been added to the previous sections (56-1, 56-1-A, 56-2, 56-3) and made available at $4.80 a copy from American Standards Association, Department PR, 70 E. 45 St., New York 17, N.Y. The specification applies to circuit breakers for frequencies in the range 25 to 60 Hz (cps), intended for use in systems of voltage above 1,000 volts in normal service conditions. The chapters contain the following: Chapter III: Rules for Strength of Insulation—general, definitions, rules for rating, tests, appendix; Chapter IV: Rules for the Selection of Circuit Breakers for Service—general, selection of ratings for normal service conditions, selection of ratings for fault conditions, information to be given with inquiries, tenders and orders, appendix; Chapter V: Rules for the Erection and Maintenance of Circuit Breakers in Service—general, erection and maintenance.

GUIDE FOR LOADING DRY-TYPE DISTRIBUTION AND POWER TRANSFORMERS, C57.96. This guide, published by the American Standards Association as an appendix to the C57.12 series of American Standards for Power and Distribution Transformers, can be obtained at $1.35 from the American Standards Association, Dept. PR 107, 70 E. 45th St., New York 17, N.Y. The guide contains requirements, terminology, and test codes used by electric light and power companies and manufacturers of transformers; it covers general recommendations for the loading of dry-type distribution and power transformers that have insulation systems to 150 and 220 C maximum hottest-spot operating temperatures. Sections included cover basic loading conditions for normal life expectancy; loading of transformers with moderate sacrifice of life expectancy; loading of transformers having a nominal rating; supplemental cooling; basis for calculations of temperatures, loss of life, and loads; and protective devices.

DIGEST OF LITERATURE ON DIELECTRICS, Vol. 22. Published by the Conference on Electrical Insulation, National Academy of Sciences–National Research Council, this volume covers material dealing with the fundamental and applied aspects of dielectrics and dielectrical phenomena published in United States and foreign literature during 1958. It includes the following chapters: Instrumentation and Measurements, Table of Dielectric Constants, Dipole Moments and Dielectric Relaxation Times, Molecular and Ionic Interactions in Dielectrics, Conduction Phenomena in Solid Dielectrics, The Breakdown of Dielectrics, Ferroelectric and Piezoelectric Materials, Ferromagnetic Materials, Rubber and Plastic Insulation, Insulating Films, Insulating Liquids and Their Applications, Ceramic Insulation, Engineering Applications. The volume may be ordered from Printing and Publishing Office, National Academy of Sciences–National Research Council 2101 Constitution Avenue, N.W., Washington 25, D.C., for $5. A limited supply of back volumes are available for the same price.

COMMUNICATIONS - ELECTRONICS TERMINOLOGY. This book, Air Force Manual 100-39 was compiled at Maxwell Air Force Base by Air University's Research Studies Institute. The volume provides complete cross-references, as well as listings of terms, nicknames, designations, abbreviations, and definitions used in military and civilian communications and electronics, including the field of astronautics. The book is available through the Government Printing Office, Washington, D.C.

RUSSIAN TECHNICAL JOURNALS. The 1959 issues of English editions of four leading Russian journals have been translated and published by the Instrument Society of America (ISA). These include four important Soviet journals: *Measurement Techniques, Instruments and Experimental Techniques, Automation and Remote Control*, and *Industrial Laboratory*. Both 1958 and 1959 issues are available for annual subscription rates ranging from $20 to $35. For additional information write ISA, 313 Sixth Avenue, Pittsburgh 22, Pa.

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